REMARKS

Claims 1-22 are all the claims pending in the application. Support for new claims 19-22 may be found in the specification as originally filed, for example, in original claim 4. Claims 1, 12 and 18 are amended to correct typographical errors.

I. Formal Matter - The Information Disclosure Statement

In paragraph 2 of the Office Action, the Examiner states that the Information Disclosure Statement filed April 16, 2001 has been entered and fully considered. However, the Examiner did not initial next to each of the references on the returned PTO Form 1449.

The Examiner is requested to complete the record by initialing next to each of the listed references and returning a copy of the PTO Form 1449.

II. The Restriction Requirement

The Examiner repeats the restriction requirement previously made orally.

Applicants confirm the election of claims 4-6 and 13-15, without traverse.

III. The Rejection Based on Hasegawa et al

Claims 4-6 and 13-15 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hasegawa '898.

Applicants respectfully submit that the present invention is not obvious over the disclosures of Hasegawa '898 and request that the Examiner reconsider and withdraw this rejection in view of the following remarks.

As acknowledged by the Examiner, Hasegawa '898 fails to exemplify a positive photoresist composition containing a polymer within the scope of the instant claims. Merely because Hasegawa '898 is alleged to contain similar types of repeating units does not make Applicants' invention obvious. While, it is believed the Examiner has not established a prima facie case of obviousness, to advance the prosecution of the case, Applicants enclose herewith a Declaration Under 37 C.F.R. §1.132 by Mr. Kenichiro Sato, which shows the unexpectedly improved properties of the presently positive photoresist composition over the materials of the reference of the rejection.

Again, as acknowledged by the Examiner, Hasegawa '898 fails to exemplify a polymer of the instant claims. Applicants have reviewed the specific examples of Hasegawa '898 and Applicants consider that polymer (35) of Hasegawa '898 is representative of the closest art. Polymer (35) of Hasegawa '898 includes a norbornanelactone (b1) that is within the scope of general formula (NII) of the present invention. Polymer (35) includes a norbornane carboxylic acid unit (a2) unit, but such a repeating unit is not within the scope of general formula (I) of the present invention.

As set forth in further detail in the Declaration, by the use of the at least three types of claimed repeating units (general formula (I), general formula (NII)

and one of general formulae (I-1)-(I-4)), unexpected improvements are achieved in the areas of edge roughness (ER) and in the number of development defects.

For the above reasons, it is respectfully submitted that the subject matter of claims 4-6, 13-15 and 19-22 is neither taught by nor made obvious from the disclosures of Hasegawa '898 and it is requested that the rejection under 35 U.S.C. §103(a) be reconsidered and withdrawn.

IV. The Rejection Based on Kinsho et al in view of Harada et al

Claims 4-6 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsho et al in view of Harada et al.

The Examiner states that Kinsho exemplifies in examples (I-35) to (I-39) and (I-45) to (I-49) photoresist compositions comprising a base resin, a photoacid generator, a basic compound and a solvent (see Table 2, c. 81-82). It is the Examiner's position that the first monomer of each of the said polymers meets the limitation of claimed formula (NII); the second monomer meets the limitations of claimed formula (I), wherein Rn3 is a substituted alkyl group; and the third monomer meets the limitations of claimed formula (NIII).

The Examiner notes that the resins of Kinsho do not contain a repeating unit of formulae (I-1)-(I-4).

It is the Examiner's position that monomer 1 of Harada meets the limitation of a repeating unit having a group represented by claimed formula (I-1).

The Examiner concludes that one of ordinary skill in the art would have been motivated to incorporate the preferred compound 27 (i.e., monomer 1) into the taught resin of Kinsho in order to improve adhesion of the formed composition.

Applicants respectfully submit that the present invention is not anticipated by or obvious over Kinsho et al in view of Harada et al and request that the Examiner reconsider and withdraw this rejection in view of the following remarks.

Applicants respectfully traverse the Examiner's position that the second monomer exemplified in Examples (I-35) to (I-39) and (I-45) to (I-49) of Kishno meet the recitations of Applicants' claimed formula (I), wherein Rn3 is a substituted alkyl group. Each of said second monomers of examples (I-35) to (I-39) and (I-45) to (I-49) of Kinsho contains a "-COOR" substituent in the position corresponding to Applicants' Rn1 to Rn4 of repeating unit of formula (I). However, Rn1 to Rn4 of Applicants' formula (I) each represent a hydrogen atom or an alkyl group that may be substituted. The "-COOR" substituents are not a hydrogen atom or an alkyl group that may be substituted.

In view of the above, even if the disclosures of Kinsho et al and Harada et al were combined as proposed by the Examiner, Applicants' invention would not be obtained.

For the above reasons, it is respectfully submitted that the subject matter of claims 4-6, 13-15 and 19-22 is neither taught by nor made obvious from the disclosures of Kinsho et al and Harada et al and it is requested that the rejection under 35 U.S.C. §103(a) be reconsidered and withdrawn.

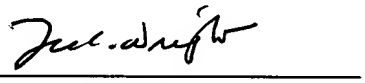
V. Conclusion

In view of the above, Applicants respectfully submit that their claimed invention is allowable and ask that the rejections under 35 U.S.C. §103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: February 19, 2003

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

The second paragraph on page 60 (Formula 10) is deleted.

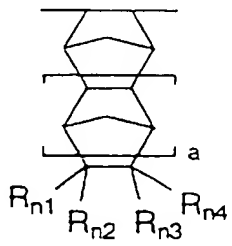
IN THE CLAIMS:

The claims 4, 12 and 18 are amended as follows:

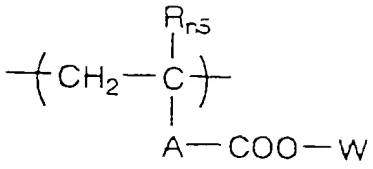
4 (amended). A positive photoresist composition comprising:

(A1) a resin which contains a repeating unit represented by the following general formula (I), a repeating unit represented by the following general formula (NII) and a repeating unit having a group represented by any of the following general formulae (I-1) to (I-4), and whose dissolving rate toward an alkaline developing solution is increased by the action of an acid, and

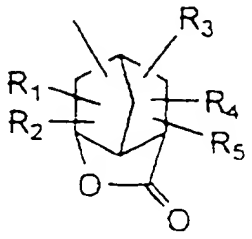
(B) a compound which generates an acid upon irradiation with an actinic ray or a radiation,



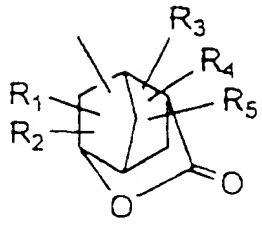
(I)



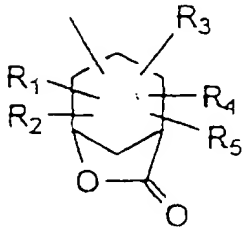
(NII)



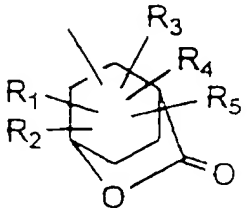
(I-1)



(I-2)



(I-3)



(I-4)

wherein in the formula (I), Rn_1 to Rn_4 each represents a hydrogen atom or an alkyl group which may have one or more substituents; and a is 0 or 1;

in the formula (NII), Rn_5 represents a hydrogen atom or a methyl group; A represents one group or a combination of two or more groups each selected from the group consisting of a single bond, an alkylene group, a cycloalkylene group, an ether group, a thioether group, a carbonyl group and an ester group; W represents a group represented by -C(Rna)(Rnb)(Rnc) or a group represented by -CH(Rnd)-O-Rne, wherein Rna, Rnb, and Rnc each represents a linear or branched alkyl group having 1 to 20 carbon atoms or an alicyclic hydrocarbon group which may have a halogen atom, an alkyl group, an alkoxy group, an alkoxycarbonyl group, an acyl group or an acyloxy group as a substituent, provided that Rna and Rnb may be bonded to each other to form an alicyclic ring together with the carbon atom to which the groups are commonly attached and, in this case, Rnc is an alkyl group having 1 to 4 carbon atoms; Rnd represents a hydrogen atom or an alkyl group; Rne represents a linear or branched alkyl group having 1 to 20 carbon atoms or an alicyclic hydrocarbon group which may have a halogen atom, an alkyl group, an alkoxy group, an alkoxycarbonyl group, an acyl group or an acyloxy group as a substituent;

in the [genral] general formulae (I-1) to (I-4), R_1 to R_5 each independently represents a hydrogen atom, or an alkyl group, a cycloalkyl group or an alkenyl

group which may have one or more substituents, and two of R_1 to R_5 may be bonded to each other to form a ring.

12 (amended). The positive photoresist [compositin] composition according to claim 1, wherein the content of the resin (A) is from 40 to 99.9% by weight relative to the total solid content in the photoresist composition.

18 (amended). The positive photoresist [compositin] composition according to claim 7, wherein the content of the resin (A2) is from 40 to 99.9% by weight relative to the total solid content in the photoresist composition.

Claims 19-21 are added as new claims.